

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appl. No. 09/911,519

Attorney Docket No. Q65313
PATENT APPLICATION

REMARKS

Applicants thank the Examiner for acknowledging the acceptance of drawings filed on
July 25, 2001.

Applicants thank the Examiner for acknowledging their claim to priority under 35 U.S.C.
§ 119, and receipt of a certified copy of the priority document.

Claims 1-21 are all the claims pending in the application.

I. Shiino and Bush

Claims 1-13, and 15-16 stand rejected under 35 U.S.C. §103(a) as being unpatentable
over USP 6,452,936 to Shiino in view of Bush, "S-CDMA: Two-way Data Over Cable."

Claim 1 recites a method of transferring user data packets from a terminal to a mainframe
of an S-CDMA point to multi-point system, comprising repeatedly transmitting a reference data
packet coded with a pilot code for the duration of the connection between terminal and
mainframe.

The Examiner has asserted that Shiino teaches this feature, referring to column 3, lines 4-
12 and Figure 3, specifically a frame configuration III of Shiino. Applicants respectfully
disagree, because the combination of Shiino and Bush fails to teach or suggest at least repeatedly
transmitting a reference data packet coded with a pilot code for the duration of the connection
between terminal and mainframe.

Shiino discloses a method to enable a spread-spectrum communication apparatus, moving
at difference speeds, to estimate channel characteristics with necessary accuracy while avoiding
unnecessary channel overhead. As shown in Fig. 3 of Shiino, a transmission frame comprises

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fixed known pilot data P, and payload data D. The first packet in each data frame also includes configuration information R. The term "reference signal" is used to refer to the combination of the pilot data P and configuration information R at the beginning of the data frame, and each occurrence of the pilot data P in the interior of the data frame. The frame configuration III is used in communication with a mobile station moving at high speed. A frame configuration II, replacing every second reference signal in the configuration III with payload data, is used when the mobile station is moving at medium speed. The configuration II transmits payload data at a higher rate with less overhead. A frame configuration I, replacing every second reference of the configuration II with payload data. Thus, the configuration I transmits payload data at a still higher rate, with still less overhead.

As shown, in each of Shiino frames, at least two types of reference signals are transmitted: the one at the beginning of the data frame with the configuration information R, and the one in the interior of the data frame without the configuration information R.

However, a skilled artisan would appreciate that, in the invention of claim 1, only one reference data packet is repeatedly transmitted for the duration of the connection between a terminal and a mainframe.

In addition, there is no reason to modify the Shiino system to transmit only one type of reference signal. On one hand, removing the configuration information R from the reference signal at the beginning of the data frame would make the system inoperable. On the other hand, adding the configuration information R to the reference signal would make the header longer, which is against the purpose of Shiino.

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Further, in the invention of claim 1, the reference data packet is coded with a pilot code. ~~However, in Shiino, the pilot signal is the reference signal or a part of the reference signal, and in the reference signal the reference signal is coded with a reference spreading code (Shiino, col. 3, lines 36-53).~~

Bush does not supply the deficiencies of Shiino. The combination of Shiino and Bush does not teach or suggest all the limitations of claim 1. Thus, Applicants respectfully submit that claims 1-8, and 19 are patentable.

Claim 9 recites a mainframe being suitable for repeatedly receiving a reference data packet coded with a pilot code, and claim 15 recites a transmitting device comprising a first coder for coding a reference data packet with a pilot code. Thus, claims 9-14, 17 and 20 and claims 15-16, 18 and 21 are patentable for the similar reasons.

Moreover, in Shiino, frame timing has to be inferred from each reference signal in received signals and supplied to various parts of a data demodulator (Shiino, col. 4, lines 17-28). In other words, a receiver 200 is synchronized to a remote apparatus one data packet by another data packet. However, in the invention of claims 19-21, the mainframe and the terminal are always synchronized during an entire duration of the connection therebetween. Thus, claims 19-21 are patentable for this additional reason as well.

II. Shiino and Bush and Nordbotten

Claim 14 stands rejected under 35 U.S.C 103(a) as being unpatentable over Shiino, Bush and Nordbotten, "LMDS System and Their Application". Nordbotten does not supply any deficiency of Shiino and Bush. The combination of Shiino, Bush, and Nordbotten does not teach or suggest all limitations of claim 14. Thus, claim 14 is patentable for this additional reason.

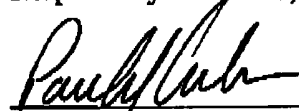
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In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,


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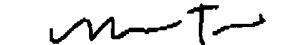
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